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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/597,126	07/12/2006	Joachim Sachs	P18698-US1	6481

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EXAMINER	
ANWAR, MOHAMMAD S	
ART UNIT	**PAPER NUMBER**
2463	

NOTIFICATION DATE	DELIVERY MODE
09/14/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/597,126	SACHS ET AL.	
	Examiner	Art Unit	
	MOHAMMAD ANWAR	2463	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 July 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5-15 and 17-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3, 5-15 and 17-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 7/13/10 have been fully considered but they are not persuasive. Please see response below:

In response to applicant argument, The Hadi-Salim reference is cited as disclosing all the elements in the independent claims. Hadi-Salim uses an ICMP Source Quench (ISQ)message with and a Congestion Experienced (CE) bit. A packet is sent to router A and if congestion is severe the packet is discarded, if the congestion is at a lower level, the router sends an ISQ packet back to the IP source, marking the packet by setting a CE bit. Then router A passes the packet with the CE bit set to router B (col. 6, lines 39-49). As stated in the Hadi-Salim Abstract, *"...if* the packet has been marked by any of the nodes...a packet flow control parameter is generated ...and sent to the source ... to control the flow of packets from the source...". Hadi-Salim is monitoring packets with CE bits to determine the amount of congestion at particular queues in order to adjust the congestion. The present invention prevents unnecessary congestion notifications (page 4, lines 1-17) that could be useless or even damaging to the overall performance (page 3, lines 35-37); that is, certain packets in a queue may have a special status. Examples of the potentially performance damaging instances include; if a flow is coming to an end and there are only a few packets left to be sent, a congestion notification would at best be useless and at worst damaging because the sender could likely have to notice the loss through a time out and if an application were limited in providing data such that the actual amount of data being sent is smaller than the

sender's flow control would allow. Performance issues related to queues are not only caused by the number of packets in the queue, but performance can be affected by the system sending messages to the sender (sending notifications)indicating that there is congestion in a queue. The present invention controls the sending of the notifications **(Examiner disagree with applicant comments, Hadi-Salim clearly mentions limiting the number of notification messages, see column 7 lines 29-40)**.

The Applicant respectfully directs the Examiner's attention to claim 1:

1, (Previously Presented) A method of controlling a queue buffer arranged to queue data :units received over a communication network, comprising:

invoking a congestion notification procedure under a predetermined condition, wherein said congestion notification procedure comprises

confirming whether one or more queued data units contain a predetermined congestion information,

performing a congestion notification with respect to the one or more queued data units if no queued data units contain said predetermined congestion notification prevention information **(see Hadi-Salim column 7 lines 45-51, congestion notification is generated)**:., and

preventing performance of a congestion notification at least with respect to the one or more queued data units containing said predetermined information and belonging to a same flow as said queued data units. (emphasis added) **(see Hadi-Salim Figure 5B, CE bit is predetermined information set to identify**

congestion, packets are discarded if CE bit is set and thus preventing sending any more congestion, otherwise a process in Figure 5A is followed for marking packets in the Queue which has no CE bit set and need congestion notification, see also column 7 lines 29-40). The Applicant respectfully submits that Hadi-Salim does not disclose every element of claim 1 or the other analogous independent claims **(The Applicant is not clear on what elements are missing, Examiner has tried to address all the limitations**). The Hadi-Salim reference (column 5, lines 34-35 and lines 45-58) is :cited as disclosing the above emphasized limitations. respectfully disagrees with: the Examiner's interpretation of the referenced portions of Hadi-Salim. in addition to the above summary of the Applicant's invention, Hadi-Salim is dealing with detection of a CE bit in a packet in order to determine what flow controls to apply to a queue. The present invention is dealing with the notifications to be sent by the queue buffer to the sender to change the load; the present invention either allows the congestion notification or it prevents the notification (**see Hadi-Salim column 6 lines 40-46, ISQ message to sender)**.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1, 3, 5, 12, 14, 15, 17 and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Hadi-Salim et al. (U.S. Patent No. 6,625,118 B1).

For claims 1 and 14, Hadi-Salim et al. disclose a method of controlling a queue buffer arranged to queue data units received over a communication network (see column 5 lines 42-45, queue), comprising: invoking a congestion notification procedure under a predetermined condition, wherein said congestion notification procedure comprises determining whether one or more of said queued data units contains a predetermined congestion notification prevention information (see column 7 lines 45-46, CE bit), performing a congestion notification with respect to the one or more queued data units if no queued data units contain said predetermined congestion notification prevention information (see column 7 lines 49-53) and preventing a performance of a congestion notification at least with respect to said the one or more queued data units containing said predetermined information (see Figure 5B, CE bit is predetermined information set to identify congestion, packets are discarded if CE bit is set and thus preventing sending any more congestion, otherwise a process in Figure 5A is followed for marking packets in the Queue which has no CE bit set and need congestion notification) and belonging to a same flow (see column 7 lines 57-58, counter reflects the congestion notifications of flows) as said queued data units (see column 7 lines 45-58).

For claims 3 and 15, Hadi-Salim et al. disclose wherein if the one or more queued data units contain said predetermined information (see Figure 5B (270), CE bit),

performance of congestion notification with respect to any queued data units is prevented (see Figure 5B (270), CE bit with packets being dropped)

For claims 5 and 17, Hadi-Salim et al. disclose determining whether a flow of data units is[:] either application limited, coming to an end or one or more data units of the flow of data units fulfills a congestion notification prevention condition (see Figure 5B (270), congestion existence bit is set or not in the flows), and if the flow of data units is application limited, the flow is ending or said one or more data units of said flow fulfills said congestion notification prevention condition, setting the predetermined congestion notification prevention information in at least said one or more data units of said flow (see column 7 lines 8-12).

For claims 12 and 24, Hadi-Salim et al. disclose wherein said predetermined congestion notification prevention information is a single bit (see column 6 line 28, CE bit).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hadi-Salim et al. in view of Sindhu et al. (U.S. Patent No. 7,359,321 B1).

For claim 2, Hadi-Salim et al. disclose all the subject matter but fails to mention wherein said performing of said congestion notification with respect to a given data unit comprises one of dropping said given data unit and marking said given data unit with a congestion notifier. However, SIndhu et al. from a similar field of endeavor disclose wherein said performing of said congestion notification with respect to a given data unit comprises one of dropping said given data unit and marking said given data unit with a congestion notifier (see Figure 11B, column 2 lines 40-47, a process of marking a packet with congestion notifier or dropping a packet). Thus, it would have been obvious

to one ordinary skill in the art at the time of invention was made to include Sindhu et al. dropping and marking scheme into Hadi-Salim et al. congestion notification scheme. The method can be implemented in an ECN/drop logic. The motivation of doing this to provide congestion control (see column 2 lines 40-51).

6. Claims 6 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hadi-Salim et al. in view of Thoo et al. (E.P. No. 0,955,749 A1).

For claims 6 and 18, Hadi-Salim et al. disclose all the subject matter but fails to mention wherein said step of determining whether a congestion notification prevention condition is fulfilled comprises the analyzing of higher layer information. However, Thoo et al. from a similar field of endeavor disclose wherein said step of determining whether a congestion notification prevention condition is fulfilled comprises the analyzing of higher layer information (see paragraph 78 lines 1-20). Thus, it would have been obvious to one ordinary skill in the art at the time of an invention was made to include Thoo et al. analyzing scheme into Hadi-Salim et al. flow control scheme. The method can be implemented in a router or terminal. The motivation of doing this is to control flow control accurately and achieve high throughput and less congestion (see paragraph 12 lines 1-4).

7. Claims 7-9 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hadi-Salim et al. in view of Li et al. (U.S. Patent No. 6,741,555 B1).

For claims 7 and 19, Hadi-Salim et al. disclose all the subject matter but fails to mention wherein said congestion notification prevention condition comprises an indication that the flow of data units is coming to an end. However, Li et al from a similar field of endeavor disclose wherein said congestion notification prevention condition comprises an indication that the flow of data units is coming to an end (see column 7 lines 22-23. FIN).Thus, it would have been obvious to one ordinary skill in the art at the time of invention was made to include Li et al. signaling scheme into Hadi-Salim et al. congestion scheme. The method can be implemented in a packet. The motivation of doing this is to supply information specific to protocol (see column 7 lines 2-4).

For claims 8 and 20, Hadi-Salim et al. disclose all the subject matter but fails to mention wherein said congestion notification prevention condition comprises an indication that flow of data units is application limited. However, Li et al. from a similar field of endeavor disclose wherein said congestion notification prevention condition comprises an indication that flow of data units is application limited (see column 7 lines 8-10). Thus, it would have been obvious to one ordinary skill in the art at the time of invention was made to include Li et al. signaling scheme into Hadi-Salim et al. congestion scheme. The method can be implemented in a packet. The motivation of doing this is to supply information specific to protocol (see column 7 lines 2-4).

For claims 9 and 21, Hadi-Salim et al. disclose all the subject matter but fails to mention wherein said congestion notification prevention condition comprises an indication that said one or more data units of said flow carry predetermined signaling identifiers. However, Li et al. from a similar field of endeavor disclose wherein said

congestion notification prevention condition comprises an indication that said one or more data units of said flow carry predetermined signaling identifiers (see column 7 lines 20-22). Thus, it would have been obvious to one ordinary skill in the art at the time of invention was made to include Li et al. signaling scheme into Hadi-Salim et al. congestion scheme. The method can be implemented in a packet. The motivation of doing this is to supply information specific to protocol (see column 7 lines 2-4).

8. Claims 10, 11, 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hadi-Salim et al. in view of Brothers et al. (U.S. Patent No. 6,822,955).

For claims 10 and 22, Hadi-Salim et al. disclose all the subject matter but fails to mention wherein said data unit sender is part of a proxy server. However, Brothers et al. from a similar field of endeavor disclose wherein said data unit sender is part of a proxy server (see Figure 1 (20)). Thus, it would have been obvious to one ordinary skill in the art at the time of invention was made to include Brothers et al. proxy server scheme into Hadi-Salim et al. congestion control scheme. The method can be implemented in a server or a router or a switch. The motivation of doing this is to use proxy server to establish communication between a device in a first network and a destination device having an arbitrary address on a second network outside of the first network. The method includes the step of generating an address resolution protocol packet to identify the arbitrary address of the destination device (see column 2 lines 5-11).

For claim 11 and 23, Hadi-Salim et al. disclose all the subject matter but fails to mention wherein said proxy server is connected to a mobile communication network and arranged for receiving data units from a sending end point outside of said mobile communication network and relaying said data units to a receiving end point connected to said mobile communication network. However, Brothers et al. from a similar field of endeavor disclose wherein said proxy server is connected to a mobile communication network and arranged for receiving data units from a sending end point outside of said mobile communication network and relaying said data units to a receiving end point connected to said mobile communication network (see column 3 lines 52-65). Thus, it would have been obvious to one ordinary skill in the art at the time of invention was made to include Brothers et al. proxy server scheme into Hadi-Salim et al. flow control scheme. The method can be implemented in a server or router. The motivation of doing this is to use proxy server to establish communication between a device in a first network and a destination device having an arbitrary address on a second network outside of the first network. The method includes the step of generating an address resolution protocol packet to identify the arbitrary address of the destination device (see column 2 lines 5-11).

9. Claims 13 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hadi-Salim et al. in view of Agrawal et al. (U.S. Patent No. 7,006, 440).

For claims 13 and 25, Hadi-Salim et al. disclose all the subject matter but fails to mention wherein said predetermined congestion notification prevention information is a

data unit count-down value that counts down the number of data units remaining in the flow. However, Agrawal et al. from a similar field of endeavor disclose wherein said predetermined congestion notification prevention information is a data unit count-down value that counts down the number of data units remaining in the flow (see Figure 5 (94), packet counter with drop/pass packet).Thus, it would have been obvious to one ordinary skill in the art at the time of invention was made to include Agrawal et al. counter scheme into Hadi-Salim et al. congestion scheme. The method can be implemented in a packet device. The motivation of doing this is to control buffers based on priority (see column 2 lines 35-36).

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MOHAMMAD ANWAR whose telephone number is (571)270-5641. The examiner can normally be reached on Monday-Thursday, 9am-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Derrick W. Ferris can be reached on 571-272-3123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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